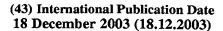
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- (71) Applicant and
- (72) Inventor: ABOUL-HOSN, Walid [US/US]; 4625 Chicago Avenue, Fair Oaks, CA 95628 (US).
- (74) Agent: SPANGLER, Jonathan; 2875 Kalmia Place, San Diego, CA 92104 (US).

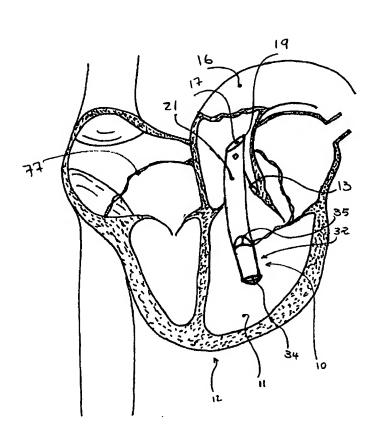
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(54) Title: PERCUTANEOUSLY INTRODUCED BLOOD PUMP AND RELATED METHODS



(57) Abstract: The present invention involves a blood pump (32) having a pump housing with an internally disposed rotor that collectively provide a dual inflow (34, 35) capability which prevents thrombus formation and reduces hemolysis during use.

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A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61N 1/36			
US CL : 600/016			
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B. FIELDS SEARCHED			<u> </u>
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Electronic data base consulted during the international search (name EAST: inlets, blood pump, rotor	e of data base and, where	practicable, sear	ch terms used)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category * Citation of document, with indication, where a	ppropriate, of the relevan	t passages	Relevant to claim No.
X US 5,685,700 A (Izraelev) 11 November 1997 (see entire document).		1-3, 8, 12-15	
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